AMENDMENTS TO THE CLAIMS

Please **CANCEL** claim 24 without prejudice or disclaimer.

Please **AMEND** claims 1 and 13 as shown below.

Please **ADD** new claims 25-27 as shown below.

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Currently Amended) A display based on a photoluminescence quenching device (PQD), the display comprising:

a substrate;

an emitter layer;

a first electrode layer, which is transparent and is arranged on a front side of the emitter layer;

a second electrode layer, which is disposed on the backside of the emitter layer; and

~~a hole barrier layer and~~ an electron barrier layer comprising phenylenediamine derivatives and a hole barrier layer where the hole barrier layer and the electron barrier layer are respectively disposed between the emitter layer and one of the first electrode layer and second electrode layer, wherein a highest occupied molecule orbital of the hole barrier layer is energetically lower than a highest occupied molecule orbital of the emitter layer and a lowest unoccupied molecule orbital of the electron barrier layer is energetically higher than a lowest unoccupied molecule orbital of the emitter layer, and

wherein the lowest unoccupied molecule orbital of the emitter layer corresponds to the lowest unoccupied molecule orbital of the hole barrier layer and the highest occupied molecule

orbital of the electron barrier layer corresponds to the highest occupied molecule orbital of the emitter layer, whereby the first electrode layer forms a cathode and the second electrode layer forms an anode during re-emissive operation of the display, and the first electrode layer forms the anode and the second electrode layer forms a cathode during emissive operation of the display; or

wherein the lowest unoccupied molecule orbital of the emitter layer is energetically higher than the lowest unoccupied molecule orbital of the hole barrier layer and the highest occupied molecule orbital of the electron barrier layer is energetically higher than the highest occupied molecule orbital of the emitter layer, whereby the first electrode layer forms a cathode and the second electrode layer forms an anode during re-emissive operation of the display.

2-7. (Canceled)

8. (Original) The display of claim 1, wherein an energy difference between the highest occupied molecule orbital of the electron barrier layer and the lowest unoccupied molecule orbital of the electron barrier layer and an energy difference between the highest occupied molecule orbital of the hole barrier layer and the lowest unoccupied molecule orbital of the hole barrier layer each amount to at least about 3.3eV.

9. (Canceled)

10. (Original) The display of claim 1, wherein the hole barrier layer comprises at least one compound selected from a group consisting of oxadiazole derivatives, oxazole derivatives, triazole derivatives and quinoxaline derivatives and/or at least one compound selected from a

group consisting of naphthalene carboxylic acid imide derivatives, naphthalene dicarboxylic acid diimide derivatives and wide-bandgap inorganic semiconductors.

11. (Previously Presented) The display of claim 10, wherein the hole barrier layer is at least one of tin oxide, titanium oxide, zinc oxide, zirconium oxide, tantalum oxide, zinc sulphide and zinc selenide.

12. (Original) The display of claim 1, wherein the hole barrier layer is disposed on a side of the emitter layer that faces towards the substrate and the electron barrier layer is disposed on a side of the emitter layer that faces away from the substrate.

13. (Currently Amended) A photoluminescence quenching device (PQD), comprising an organic light emitting material;

a first electrode which is transparent and is located on a front side of the organic light emitting material; and

a second electrode which is located on a back side of the organic light emitting material wherein the PQD comprises ~~a hole barrier layer and~~ an electron barrier layer comprising phenylenediamine derivatives and a hole barrier layer disposed between the light emitting material and one of the first electrode or the second electrode, respectively, and a highest occupied molecule orbital of the hole barrier layer is energetically lower than the highest occupied molecule orbital of the light emitting material and a lowest unoccupied molecule orbital of the electron barrier layer is energetically higher than a lowest unoccupied molecule orbital of the light emitting material, and

wherein the lowest unoccupied molecule orbital of the light emitting material corresponds to the lowest unoccupied molecule orbital of the hole barrier layer and the highest occupied

molecule orbital of the electron barrier layer corresponds to the highest occupied molecule orbital of the light emitting material, whereby the first electrode forms a cathode and the second electrode forms an anode during re-emissive operation of the PQD and the first electrode forms the anode and the second electrode forms the cathode during emissive operation of the PQD; or

wherein the lowest unoccupied molecule orbital of the light emitting material is energetically higher than the lowest unoccupied molecule orbital of the hole barrier layer and the highest occupied molecule orbital of the electron barrier layer is energetically higher than the highest occupied molecule orbital of the light emitting material, whereby the first electrode forms a cathode and the second electrode forms an anode during re-emissive operation of the PQD.

14-15. (Canceled)

16. (Original) The PQD of claim 13, wherein an energy difference between the highest occupied molecule orbital of the electron barrier layer and the lowest unoccupied molecule orbital of the electron barrier layer and an energy difference between the highest occupied molecule orbital of the hole barrier layer and the lowest unoccupied molecule orbital of the hole barrier layer each amounts to at least about 3.3eV.

17. (Canceled)

18. (Original) The PQD of claim 13, wherein the hole barrier layer comprises at least one compound selected from a group consisting of oxadiazole derivatives, oxazole derivatives, triazole derivatives and quinoxaline derivatives and/or at least one compound selected from a

group consisting of naphthalene carboxylic acid imide derivatives, naphthalene dicarboxylic acid diimide derivatives and wide-bandgap inorganic semiconductors.

19. (Previously Presented) The PQD of claim 18, wherein the hole barrier layer is at least one of tin oxide, titanium oxide, zinc oxide, zirconium oxide, tantalum oxide, zinc sulphide and zinc selenide.

20-24. (Canceled)

25. (New) A photoluminescence quenching device (PQD), comprising:

a substrate;

a transparent electrode layer arranged on the substrate;

a hole transport layer arranged on the transparent electrode layer;

a hole barrier layer arranged on the hole transport layer;

an emitter layer arranged on the hole barrier layer; and

a second electrode arranged on the emitter layer,

wherein a highest occupied molecule orbital of the hole barrier layer is energetically lower than a highest occupied molecule orbital of the emitter layer and a lowest unoccupied molecule orbital of the hole barrier layer is energetically lower than a lowest unoccupied molecule orbital of the emitter layer.

26. (New) The PQD of claim 25, wherein the hole barrier layer comprises at least one compound selected from a group consisting of oxadiazole derivatives, oxazole derivatives, triazole derivatives and quinoxaline derivatives and/or at least one compound selected from a

group consisting of naphthalene carboxylic acid imide derivatives, naphthalene dicarboxylic acid diimide derivatives and wide-bandgap inorganic semiconductors.

27. (New) The PQD of claim 26, wherein the hole barrier layer is at least one of tin oxide, titanium oxide, zinc oxide, zirconium oxide, tantalum oxide, zinc sulphide and zinc selenide.